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ART. I. *The Cultivation of Forest Trees.* Communicated by Hon. H. A. S. DEARBORN.

OF all the numerous studies, which can occupy the human mind, that of nature is the most interesting, important, boundless and exalting. The immense expanse of the firmament, and the vast rotundity of the earth, are the capacious fields of inquiry — each presenting innumerable subjects, for the most sublime contemplation, extensive research and elaborate experiment. The astronomer traverses the infinite region of space, and from the most distant star, points, with the finger of an Anaxagoras, to heaven. Reason, upborne on the wings of science, proclaims the harmonious revolution of the celestial orbs, as conclusive evidence of an omnipotent and beneficent God, reveals to aspiring man the immortality of his own soul, and gives assurance of an eternal existence beyond the skies.

Transcendently glorious are the wondrous conceptions, the mighty efforts of intellect, and the momentous results of those gifted philosophers, who thus "look through nature up to nature's God." But they pursue a route of moral grandeur, which none, save of the loftiest genius, can presume to tread. Still, there is left the extensive realm of natural history, in which those of the highest endowments, as well as the humblest individual, may discover objects of the deepest interest, commensurate to the capacities and tastes of each, in all the gradations of talent, fortune and rank. And, what gives peculiar value to this instructive and delightful study, is its intimate connexion with the condition, and appropriate adaptation to the various pursuits of the

husbandman. He resides in the midst of the natural productions of the earth, whose construction and elementary materials are constantly being exposed to observation, in the daily excursions and operative labors, incident to cultivation. The mountain precipice, the deep channel of the torrent, and the furrow of the ploughshare, offer perpetual means for investigating the geology and mineral resources, of a considerable extent of country; while the vegetable and animal creations constitute the very objects of his attention, and the chief sources of his subsistence, prosperity and wealth.

If it has been said, with as much truth, as vigor of expression, that

"An undevout astronomer is mad,"

why may it not be alleged, with equal propriety, that a resident in the country, who is not a naturalist, must be deficient in vision, or obtuse in perception. There is some one, of the many subdivisions of this copious science, which each may select for inquiry and experiment, as best accords with his taste and ability, and which can be prosecuted with pleasure and advantage, as subsidiary to the general improvement of his estate, or to those rural embellishments, which the refinements of the age have rendered indispensable.

As it may be pertinently asked, why our country does not present more palpable illustrations of the prevalence and influence of the views, principles and sentiments which have been expressed, it becomes necessary to attempt a partial explanation.

Natural History long lingered in the rear of the other sciences, and was never cultivated in any country, until an exalted state of civilization had been developed. Among the ancients, none of its departments were thoroughly explored, and but partially illustrated. In zoology, but little has been transmitted, other than imperfect descriptions of some of the most extraordinary animals, with exaggerated accounts of imaginary quadrupeds, birds, fish and reptiles. The minotaur and unicorn, the phœnix and griffin, the python and dragon, were enumerated, as veritable realities, among the wonders of creation.

The only authors, whose works have descended from the ages of antiquity, that can be considered worthy of being named with a Linnæus, a Buffon and a Cuvier, are Moses and the elder Pliny; but the former was brief in his descriptions, and generally presents a mere poetical nomenclature of the inconsiderable number of the animal and vegetable productions, which were peculiar to the small portion of the globe, with which he was acquainted. The other illustrious

naturalist had formed no systematic theory, by which the classes, orders, genera and species were intelligibly arranged. Neither of the great divisions were treated scientifically, and there was more of fancy, than the results of exact observation, in the descriptions, by which a curiosity for the marvellous was excited, rather than a taste for the advancement of useful intelligence induced. To afford entertainment, appears to have been the predominant object of those writers, who made the most extensive researches, and instruction, but a subordinate consideration. All was generalized, and instead of facts and accurate information, vague and traditionary statements were so profusely intermingled, with idle speculation, that philosophy gained but scanty additions, to her accumulations of truth.

While we go back to the splendid eras of Grecian and Roman history, for the most perfect examples of eloquence, poetry and the arts, — explore the wide spread ruins of their intellectual grandeur for the most brilliant gems in letters, the most recondite investigations in the exact sciences, and the most captivating lessons in morals, as well as for all those wondrous efforts of genius, talent and erudition, which illumined the ages of Pericles and Augustus, — we must descend to the eighteenth century, to find definite and satisfactory instruction, in relation to the natural productions of the earth. If a few individuals acquired distinction at an earlier period, their laborious researches were but little known, and it is only within the last fifty years, that their more successful and eminent rivals in the same career, have been duly and generally appreciated. How many persons are there still living, who can well remember, when the terms zoology, botany and geology were seldom heard in this country, and were only understood by a very small number of isolated individuals, who, in retirement, prosecuted the study of those sciences, rather for self-gratification, than for those great purposes, to which they are capable of being rendered subservient; and now, what section of the Union is there, that cannot boast of institutions, expressly founded for their cultivation, or where numerous and zealous pupils are not following in the refulgent wake of a Bartram, a Bigelow, a Cleaveland, a Silliman, a Say, a Harris, a Wilson and an Audubon?

To Sweden, France, Germany and England, is the world indebted for those adventurous cultivators and successful founders of that taste for natural history, which now so universally prevails, and has produced such important results. The far reaching mind of Linnæus, left no field unexplored in the animal, vegetable and mineral kingdoms.

With an industry as vigilant and untiring, as his capacious genius and ardent temperament were inquisitive and active, that illustrious man, in the emphatic language of Chatham, "trampled impossibilities under his feet," and cheerfully devoted a whole life, in perfecting his magnificent work on the SYSTEM OF NATURE. This gave the first effective impulse to botanical inquiry, which has ever since advanced with rapid strides.

The study of Zoology was suddenly excited by the glowing eloquence of Buffon, whose powerful influence has never ceased to be felt, where greatness of intellect and the eloquence of literature are admired. No writer has done so much to render natural history entertaining, and to elevate its rank among the objects, on which the human mind is employed.

Germany, so prolific in authors, and so distinguished for her eminent men in all the branches of literature, science and the arts, may justly be considered as the birth place of mineralogy, and the cabinet of Werner as its cradle. Less than sixty years have elapsed, since the promulgation of that eminent miner's theory, and we now behold his disciples in every section of our republic.

As the vegetable realm is the most important to man, in all the stages of his progress, from the savage to the highest state of civilization, it has justly claimed more attention than all the others.

As a science, merely, botany is a most interesting study, but when rendered tributary to the useful and ornamental arts, in all their relations with national industry and domestic economy, its immense importance is conspicuously revealed. A knowledge of plants, in the most extensive meaning of the term, is so intimately connected with all our pursuits, our wants, our comforts, our enjoyments and our very existence, that it were difficult to enumerate the infinite variety of purposes, to which it may be applicable. To the farmer, gardener and florist, an acquaintance with the distinctive characteristics, by which the genera and species are recognised — with vegetable physiology, and with the habits, nutriment, soil and mode of cultivation, best adapted to each kind, is indispensable to successful experiment, where more exact and extended information is as much the laudable object of pursuit, as the advantages to be derived from the products obtained. Still there is a practical intelligence, relating chiefly to the art of rural tillage, which, to a certain extent, may dispense with botanical theories and scientific instruction, and yet accomplish many of the great purposes of agriculture, and produce, highly important

results. It is therefore proposed, to call the attention of the husbandman, as well as of every class of citizens, who admire the country, or have a taste for picturesque scenery, to the rearing of Forest Trees, as one of those peculiar branches of culture, in which industry, enterprise, and mere operative skill, may achieve all that is desirable, so far as a profitable or a pleasing effect is intended.

The first law ever promulgated was concerning trees, and the next is as ancient as Moses, which prohibited their destruction, even in an enemy's country. As an illustration of the extensive knowledge of Solomon, his biographer states, that "He spake of trees from the cedar of Lebanon to the hyssop that springeth out of the wall."

By the earliest decrees of Rome it was a capital offence, "*alienas arbores incidere*," and the Lex Aquilia, as well as the Twelve Tables, contained regulations for the preservation of forests.

All history teaches us in what high estimation groves were held by the most flourishing nations of antiquity. The majestic cedars of Lebanon were distinguished by the holy psalmist, as "the trees of the Lord."

It was under an oak, that the venerable progenitor of the Israelites received and entertained his divine guests; and when he confirmed the league of Beersheba, he there "planted a grove and called upon the name of the Lord;" thus consecrating it, as a place of devotion, as was the universal custom in the east, until all ceremonial worship was confined to the tabernacle or the temple.

Our Saviour, the prophet Elijah, and John the Baptist, frequently retired into the wilderness for profound meditation and prayer. Quintillian observes: "Groves were, of old, the temples of the gods, and men at this day consecrate the most superb trees to some divinity; nor do we more adore our glittering shrines of gold and ivory, than the groves in which, with a deep and awful silence, we worship them. From hence, temples began to be erected in such places, and there was scarcely a grove without its temple, and almost every temple was surrounded by a grove."

Socrates, Plato and Democrites entertained their auditors under the spacious avenues of trees, which the gardens of the Academy and those of the other public edifices afforded. Thucydides composed his incomparable history, in the Scaplan groves, and in Cicero's discourse on Oratory, the interlocutors were seated under the lofty plane trees of his Tusculan villa.

Groves were consecrated to all the distinguished divinities of ancient mythology. The Aricinian was sacred to Diana, and those of Helicon and Parnassus to Apollo and the Muses. Neptune was honored in the Helicean, while the Lebodian, Arsinoan, Paphian and Sinonian were dedicated to all the gods.

Besides these sacred purposes, to which the most superb forests were appropriated, the memories of heroes, and other illustrious men, were thus perpetuated, and the groves of Achilles, Hector, Bellerophon and Alexander are celebrated in the literature of antiquity.

Pliny, who lived in the palmy days of Rome, observes, that the people in the country, imitating the simplicity of their pious ancestors, consecrate the most beautiful trees to their divinities, and we do not less revere the sacred woods and the religious silence which there reigns, than our magnificent statues of the gods.

The Minturnesian grove was esteemed so venerable, that strangers were not permitted to enter it; and when Xerxes was passing through Achia, with his immense army, he expressly forbade any violence to be done to a grove dedicated to Jupiter.

Thus it appears, that from the earliest ages, forests were consecrated to holy uses; not only by superstitious nations, to their deities and heroes, but to the true God, by the patriarchs themselves, who frequented such places to serve him, and to celebrate sacred mysteries, prayers and oblations. From thence the Druids of Britain, Gaul and other Celtic nations had their origin, and there scarcely exists a modern nation, which can boast of civilization, that does not evince a deep reverence for the stately forest, the umbrageous valley, secluded wood and mountain groves. Why, then, are the citizens of the United States less interested, even in the mere embellishments of woodlands, than their European contemporaries? Are not the principal causes, which have rendered our respect for forest trees less intense, to be sought in the peculiar history and position of Americans? We have been, for more than two hundred years, the pioneers of a wilderness and have not advanced, in the more refined arts of civilization, with a rapidity, quadrating with our progress, in those of absolute necessity and substantial utility. There is a refinement of the mind, not dependent upon the extent of intellectual cultivation, general wealth and universal prosperity, but is more the result of a long succession of ages, during which the gradual progress of information, diffuses an ameliorating, chastening and elevating influence over the whole mass of the population. Distinguished attainments, a delicate per-

ception of the beautiful, in the creations of nature and the productions of art, and universal propriety and gentleness of manners, can only be induced by the revolution of centuries. Time has a most potent agency in this great work of national reformation, when united with the instructions of philosophy, the ardor of honorable ambition, the enthusiasm of the student and the excitement of general competition. Then and then only, all that genius, talent and learning can achieve, will be accomplished, and the most attractive and imposing attributes of the human character fully developed, richly embellished by the loftiest principles of morals, and sanctified by the most sublime sentiments of religion.

When our forefathers landed upon these shores, the primary and most important object was, to prepare the earth for the rugged pursuits of the rudest agriculture, and the partial destruction of that interminable forest, which overshadowed the whole continent, was indispensable; but the work of devastation has been wantonly continued, by each generation, with but little regard to the wants, comforts, or embellishments of the future. So immediately was the idea of a wilderness associated, with the deprivations of subsistence, the enjoyments and protection of society, and the terrors which it enveloped, that trees ceased to be objects of admiration to our pilgrim forefathers, and their extermination was deemed as indispensable for security, against ferocious wild beasts and the savages, to which they were a mighty fortress, as for the purposes of agriculture. These causes continued to operate so long, that not merely a disregard, but an absolute antipathy to trees, ultimately became almost universal; they were the chief obstructions in the progress of colonization, and the beauties and grandeur of forests were invisible to those, who were compelled to uproot the lofty pine, the graceful elm and majestic oak, ere they could establish a home, obtain the means of existence, and be secure, from the appaling incursions, of vindictive and remorseless enemies. The effects of this primitive system were experienced, long after the motives which rendered it necessary had ceased, and custom became as efficient in its deleterious consequences, as were the reasons in which it originated; and even upon the borders of the ocean, where the immense domain, of extinguished barbarous tribes, is thickly populated by flourishing States, it still predominates, — if not in all its former energy, yet to an extent, which is so sufficiently apparent, as to be justly obnoxious to rebuke, and requires frequent appeals to, even the most intelligent, to co-operate, in strenuous efforts, for counteract-

ing the disastrous consequences. The object has now become worthy of the most serious consideration; but before a great change can be effected, example must give potency to theory, and practical illustration confirm the inductions of reason. That native spirit of enterprize, which but slumbers from the absence of excitement, must be aroused by the hope of advantage, the pleasure of the pursuit, or the actual enjoyments, which intelligence and industry may realize, in this vast field of adventure. A national taste for rural pursuits should be inculcated, fostered and extended, by individual exertion and public patronage. It is essential to the completion of those characteristics, which designate the age, and properly belong to our actual condition as a people, from the elevated place we occupy, in the ranks of civilization.

It is notorious, how much has been accomplished in other countries, by the instructions of the illustrious in letters, the experiments of the most elevated in rank, the munificence of the affluent, and the enlightened policy of government. Bacon, Milton, Temple, Pope, Addison and Shenstone, zealously endeavored, both by precept and example, to awaken their countrymen to a just perception of the beauties and magnificence of rural scenery, and the necessity of vigorous efforts being made, for enhancing the value of private estates, embellishing the great avenues, squares and public grounds, and improving the general aspect and comforts of the whole country, by extensive parks and other plantations of forest trees. With Evelyn, they deplored the waste and cheerless appearance of large portions of their admired isle, — the denuded condition of the once celebrated forests of Sherwood, Dean, Woodstock and Windsor, and eloquently appealed to the patriotism, intelligence, taste and interests of the princes, nobles and gentry of the realm, to unite in advancing this interesting and valuable species of cultivation; and now, there is scarcely a land proprietor in England, Wales, Scotland or Ireland, who is not ardently engaged, in clothing the bleak hills, barren downs and long neglected moors of his domain, with superb groves of timber and ornamental trees.

The importance of establishing new parks and public squares, either within, or near all the cities and large towns, has recently been a subject of Parliamentary inquiry; and a very interesting and able report was made, by a committee of the House of Commons, in which it was urged, as a measure indispensable to the health, comfort and innocent recreation of the inhabitants; and especially to the indus-

trious classes, who were confined most of their time, by mechanical, manufacturing or other occupations, requiring exclusion from the open air, — and this, too commonly, in the most narrow, densely populated and insalubrious streets.

Notwithstanding great expenditures had been made during the last half century, by enclosing and planting with trees, several capacious parks and public squares in London, the committee earnestly recommended, that others should be commenced on extensive plans, not only in that city, but every considerable town in the kingdom. They considered such places of general resort, for exercise and innocent recreation, so necessary, that they should be speedily provided, either by the national government, the various municipalities, or the liberality of the affluent; that this was demanded from motives of humanity, as well as a regard to the best interests of the country, as being not only eminently conducive to the general health, the improvement of the morals and the refinement of the manners of the people, but as administering, in an especial manner, to the happiness of those, who, after days of unceasing labor, have no other means of participating in the rural enjoyments, or of ever indulging in that solitary yet tranquilizing morning or evening walk, which the green fields, hawthorn lanes, refreshing groves and shaded avenues of the country afford, to a large mass of the population, and which is so desirable to all.

So important are forest trees considered in France, that they are protected from destruction by severe penal laws, while the most liberal encouragement is afforded by the government, for their multiplication. Agricultural Societies, experimental farms and national nurseries have been established in all parts of the empire, under the immediate patronage of the sovereign, for the purpose of exciting a general interest, favorable to the growth of timber, as much as for all the other branches of rural industry. There, as has long been the case in Great Britain, seeds of trees are collected from every portion of the globe, which are capable of being cultivated in the diversified climates of that country; and there may be found, in the national parks and on the estates of many large proprietors of land, all the forest trees and shrubs, which are indigenous to the United States. The Michauxes have traversed every section of our republic, in search of plants, to enrich the valuable collections of their native land.

We must follow the example of older nations, as the condition of our country approximates to that, which rendered it indispensable elsewhere. It is not merely for the purposes of civil and naval archi-

tecture, and as fuel, that the culture of forest trees should be promoted and fostered; but they are of the first necessity, in many of the mechanic arts, the extensive manufactories of innumerable articles, and to supply the private and public demands, for an infinite variety of other objects of application.

Besides the enormous domestic consumption of the products of our forests, the annual exports amount to nearly five millions of dollars.

The rapid destruction of trees for all these purposes, with that still more extensive one, occasioned by those wide spreading settlements, which are advancing with hasty strides towards the waves of the Pacific Ocean, as well as by those accidental conflagrations, by which thousands of acres are annually laid waste, demands the most grave consideration of individuals and of the government. To New England, in particular, this subject is of the deepest interest, and of the first consequence. Being the most commercial portion of the Union, we should not neglect the means of furnishing the most essential materials, for those immense commercial fleets, which are destined, in the not distant future, to throng our harbors, and cover the seas of every clime.

For many years, ship timber has been procured with great difficulty, and it is now so scarce, that our building yards are supplied from the borders of the great lakes, as well as the middle and southern States, with the most essential portions of the frames. The forests of white oak, once so extensive, have nearly disappeared, and can only be reproduced by artificial means.

As fuel, and for the many various purposes of husbandry, how indispensable is a wood lot; yet how few farmers, in many sections of this Commonwealth, have that valuable appendage to their estates, when it is in their power to create them, at but little comparative labor or expense. Notwithstanding the Agricultural Society has, for years, offered a liberal premium for plantations of forest trees, it is believed that not a single application has been made, for the promised reward of successful experiment.

In this country very few have attempted to raise groves of forest trees from the seed, in consequence of a too prevalent opinion, that the process is difficult, the labor and expense so great, the growth so slow and the prospect of remuneration or picturesque effect so distant, as to render it a hopeless undertaking. But we have the fullest instruction as to the method, and conclusive evidence of the complete success, with which the practical operations have been long prosecuted, in numerous British and French works on Arboriculture; and from my

own experience, I am confident, it is in the power of every landholder to surround his dwelling, border the avenues and different compartments of his estate, for the purposes of comfort and embellishment, and establish a grove sufficiently extensive, that in twenty years it will supply fuel and timber for all the required domestic purposes, and forever after, if properly managed.

I have raised from the seed, several thousands of Elms, Button-Woods, Rock Maples, White Ashes, Hickories, Black Walnuts, Butternuts, White, Red and English Oaks; and some of them have obtained, in fifteen years, a height of more than thirty feet, and from eight to ten inches in diameter.

Whoever attempts this interesting and valuable culture, cannot fail to be cheered on in his progress, by the pleasiug occupation, and will be sure of leaving a rich inheritance to his children, while he will merit the gratitude of his countrymen, both for the example and the beneficial result. None are too young to commence, and that no one is too old has been beautifully illustrated by Homer. When Ulysses returned from the Trojan War, he found his aged father planting trees, and asked him, why, being so old, he subjected himself to the labor of doing that, of which he could never expect to enjoy the benefit: the venerable Laertes, not recognising the person who addressed him, replied: "I plant against my son Ulysses comes back."

Is there not many a father, who would be glad to leave such a memorial of his parental affection, while he would experience the most soothing reflections, in the decline of life, to repose under the shadow of trees, whose seed had been planted, by the hand of a darling child.

Why then should not the youth of our land be imbued with a taste, for the beauties of picturesque scenery, carefully instructed in the art, and early enabled to appreciate the advantages, which are to be derived from Arboriculture. It is an occupation which more perfectly blends the useful and honorable, with the interesting and agreeable, than any which man can pursue; and differing from all others it never ceases to excite renewed exertions, for the passion to continue it even increases with age, and only expires on the brink of the grave.

Sires of New England, you have a high and responsible, yet a most pleasing and acceptable duty to perform, which will not only embalm your memories deep in the hearts of your offspring, but entitle you to the grateful benedictions of future generations. Hasten, then, to illustrate precept by experiment, and, with the ardor of an Evelyn, call upon your sons to "RISE UP AND PLANT;" for you may be assured,

that the anxious solicitude which induced, and the kind attentions which encouraged these labors, will constitute their most sacred and pleasing reminiscences, when you shall have been gathered to your fathers.

The external aspect of a country residence, without the appropriate embellishments of groves, trees, shrubs and flowers, appears as desolate and cheerless, as would the interior, divested of those conveniences and decorations, which are intended to administer to the comfort and gratification, of the independent or affluent proprietor. What more dreary and melancholy scene can be presented, than an isolated house, on some bleak and naked hill, or treeless plain, — exposed to the driving snow storms of winter, and the dazzling influence of summer's ardent sun. The ruins of Balclutha would be infinitely less revolting. The idea of loneliness would not be associated with commiseration, for in those, we should be reminded of former days of chivalry and splendid hospitality; and instead of having awakened the sentiment of despair, the imagination would mingle the natural beauties and grandeur of the surrounding landscape, with the mustering recollections of the by-gone affluence, sylvan sports, convivial pageantries and martial deeds of their ancient lords, when in the full enjoyment of prosperous fortunes, and the plenitude of their baronial glory.

Who in passing such a dwelling, as has been described, and is too often seen in this favored land, does not look upon it, as he instinctively hurries onward, as the only remaining structure of a once populous region, and which had become the temporary encampment of barbarians, whose devastations had stricken the soil with sterility. The thought of suffering humanity is painfully united with the barren solitude of a desert, — an Arab's tent pitched in the midst of the boundless waste of Barca.

Of all the nations of the earth, there is no one, which offers such powerful inducements as the United States, for undertaking the culture of useful and ornamental trees, for those of our forests are unrivalled for their variety, size and magnificence. Michaux observes, in the introduction to his Silva, "that, in America the trees more than thirty feet high exceed one hundred and forty, while in Europe there are but thirtyseven, which attain this height; and of these but eighteen enter into the composition of forests, and only seven are employed for domestic or maratime purposes."

There are fiftythree species of the Oak, in North America, seven-

teen of the pine and eight of the Maple; of the superb trees which compose the genus of Magnolia, but fifteen are known to exist upon the globe, five of which belong to China, one to the West Indies and the remaining nine to the United States. We have eleven species of the walnut, while not one is indigenous to Europe, as the variety commonly cultivated there, is a native of Persia.

Besides the reasons which have been suggested, as inducements for devoting a part of our leisure to the history, science and art of Arboriculture, there are others, in which even the antiquarian cannot fail to be interested. A knowledge of the longevity of trees would aid him, in illustrating the history of the monuments of civilization, and thus become auxiliary, in elucidating that of the globe we inhabit.

De Candoll, the learned professor of natural history, in the university of Geneva, observes with equal truth, beauty and boldness, that "old trees may be considered as the medals of distant ages." Are they not then, as worthy of consideration as those of gold, silver and bronze, which bear the impress of imperial ambition, and are so zealously sought, carefully preserved and eagerly consulted for the verification of chronology? This may appear extravagant and inexplicable, but still no position is more tenable, no fact more firmly established, or more capable of demonstration.

A tree has been considered, by writers on vegetable physiology, either as an aggregate of as many distinct plants, as there are buds on its extremities; or as one being, analogous to that, which is called an individual, when speaking of animals. By the first hypothesis, as new buds are continually added to the old, the aggregate tree, which is the result, has not, necessarily any term to its existence. By the other theory, which is that very generally adopted, as a ligneous accretion is annually formed round the trunk, and branches, and endowed with new organs, it is evident, that there should not occur that induration of the functions of life, which produces death in the animal kingdom, by what is called old age, and therefore trees should never die, but from some accidental cause, as a deficiency of aliment, an imedicable wound, or the rigors of an uncongenial climate. This being conceded, it is evident, that examples should exist of an extraordinary age, which is indubitably the fact, as has been clearly established by the most conclusive evidence.

The process of ascertaining the longevity of trees, is simple and unerring; being cut transversely through their trunks, circles are seen from the centre, to the circumference, each of which indicates the

annual growth of the tree. As, however, but few, comparatively, can be thus examined, tables have been carefully constructed, by several learned and ingenious naturalists, from which the approximate age of trees, of like species, may be readily ascertained. Having collected admeasurements of the diameter of many trees of different kinds and ages which grew in the same latitudes, whose annual circles had been numbered, or whose exact age was known, from some record of the period when they were planted, the annual average increase is discovered; and when the longevity of a standing tree is desired, it is only necessary to find its circumference, when the table of the annual average increment of the species will give its age, with sufficient exactness, to prevent an error of any moment.*

By this method, Adanson and De Candoll have ascertained and published accounts of the probable longevity of numerous celebrated trees. Some of the cedars of Mount Lebanon, measured in 1660 by Maundrell and Pocock, were found to have been nearly eight hundred years old, — the oak of Welbeck-lane, described by Evelyn, must have been 1400, — the linden of Choille 538, and that of Irons 583 — the olive trees in the garden of Jerusalem certainly existed at the time of the Turkish conquest of that city, and one at Pescia in Italy had endured seven centuries. The English yew trees of Fontaine Abbey, in the county of York, have survived twelve centuries, those in the church yard of Crowhurst, in Surry, fourteen hundred, — that of Fotheringall, in Scotland, from twentyfive to twentysix hundred, — that of Braburn, in Kent, three thousand. But they describe two other trees of a most remarkable character, viz. the Baoback, estimated to be five thousand one hundred and fifty years old, and the Cypress of Taxodium, in Mexico, which is one hundred seventeen feet ten inches in circumference, is still more aged. Other examples, less remarkable, seem to confirm their assertion, that in all probability there still exist trees, of not only a prodigious antiquity, but such as are living witnesses of the last great physical revolution of the earth.†

The longevity of trees then, is a subject which possesses real interest, beyond that of mere curiosity; and if we attach the greatest value to those relics of letters and the arts, which have been so eagerly collected from the ruins of ancient nations, why should we not feel as deep a solicitude, to ascertain whether trees do not exist which were contemporaries with the oldest generations of the human race. In many cases they would enable us to establish the date of ancient monuments, while the later would aid in fixing the age of trees which

* See Note I. † See Note 2.

grew in their vicinity. Such inquiries cannot fail of being essentially useful; but if they are merely curious, still are they not worthy of being prosecuted? For curiosity is the most distinctive and elevated propensity of our nature; it is the impulsive attribute of the mind, which rouses and propels into vigorous action, all the other faculties, with which we are endowed. Under its potent influence the inconsequential and important are sought with equal avidity, and the desire of gratification increases, with the advancement of civilization and the acquisitions of knowledge. How numerous are the instances, where momentous discoveries in science, valuable inventions in the arts, and developements of highly interesting facts, have been the fortuitous results, of an unrestrained indulgence in this ardent disposition, this restless passion, to behold whatever exists, or to ascertain, what has been, or can be accomplished, by the physical and intellectual powers of man. It was this inquisitive and all searching spirit, this aspiring and far reaching emanation of the soul, which produced the telescope, the magnetic needle, the electrical battery, and the theory of gravitation, — hurried a Park and a Clapperton into the immense desert of Africa, to trace the course of the Niger, induced Ledyard to traverse the wilds of Europe and Asia, that he might stand on the shores of Kamtschatka, and induced the learned and daring Humboldt to scale the snow capt summit of the Andes, merely that he might detect a new lichen, or identify those points of elevation, which were the equivalents of the degrees of latitude, in climate. What, in fact, are the vast additions which have been made, in all the departments of natural history, but the trophies of its zealous votaries, who willingly braved the severest hardships, for the acquisition of a single unknown mineral, plant or animal. Are not nearly all the books of travels, but so many verifications of the position, which has been assumed. Do they not anonunce, from the expedition of Hano, to those of the last tourists of Jerusalem, the Alps and the banks of the Indus, that the disposition to explore is as universal, as it is indomitable and insatiable. Let not any object then, however insignificant, be regarded as unworthy of consideration; for it may be the cause of some wonderful invention, the first scintillation of some splendid triumph of genius, or indicate the route to some glorious victory of reason. Nothing, in fact, should be excluded from observation, because of its apparent unimportance, for it should be recollected, that angels, under the humblest vestments of humanity, have been unconsciously entertained, whose visitations involved the destinies of empires.

NOTES.

1. Several simple methods may be employed for increasing the data, by which this interesting inquiry may be so far extended, as to enable any one to ascertain the age of remarkable trees, whose circumference is known, in any part of the globe. De Candoll uses and recommends strips of paper of various lengths, and about an inch wide, for obtaining the diameter and number of annual circles, where trees have been felled. One of these being extended across the stump, or trunk, the thickness of each years growth is marked thereon with a pencil, from the centre to the bark, and the diameter; but as it is quite as desirable to ascertain the circumference of standing trees, whose age is known, a pocket graduated measuring tape, will be found to answer best for both purposes; as the diameter can be ascertained in feet and inches, the circles counted, and the results entered in a memorandom book. These facts, as from time to time, collected, can be arranged in tables, under appropriate heads; and if individuals, who have it in their power to prepare such tables would do so, and publish them in some scientific journal, they would furnish the elements, for constructing one, sufficiently extended, to answer all the purposes desired. This is being done in many parts of Europe, and it is to be hoped, that there are citizens, in every section of this country, who will be induced to devote so much attention to the subject, as that in a few years, complete tables may be prepared, by which the age of any of our native trees may be ascertained, while they are yet flourishing. No country affords so good an opportunity, as the smallest to the most gigantic, of all our numerous species are continually falling, under the blows of the farmer and the lumberman, in all parts of the Union.

In a recent publication, the learned and distinguished De Candoll, has earnestly requested, that all persons, in every part of the globe, who take an interest in rural affairs, or investigations in the vegetable kingdom, and are disposed to aid in the accumulation of intelligence, on this subject, would do him the favor of transmitting such facts, as it may be in their power to collect.

2. The ages of the following remarkable trees have been ascertained, with as much exactness as historical data, or the principles, which have been derived from the actual admeasurement, and counting the circles of trees of like kind, afford.

	Age.
A Date tree in Egypt,	300 years.
Apricot tree in Damascus,	324
Grape Vine in Damascus,	378
Red Oak of Mount Etna,	400
Walnut tree of Balbic,	406
Almond tree of Damascus,	640
Fig tree of Damascus,	648
Olive tree of Palestine,	710
Fig tree of Palestine,	780
Olive tree of Asia Minor,	850
A Live Oak in Louisiana,	1000
Sycamore or Plane tree of Palestine,	1050
Sycamore of Heliopolis,	1805

One of the Cedars of Mount Lebanon,	1824
Peletin [Terebinthus] of Asia Minor,	1890
A Cedar of Mount Lebanon,	2112
The celebrated Chesnut of Mount Etna,	2660
Sycamore of the Bosphorus,	4020

The Sycamore near the ruins of Heliopolis, according to the tradition in Egypt, existed before the visit of Joseph and Mary, and that they sat under its shadow, and drank water from a neighboring well. The accumulation of mud, from the deposite of the Nile, has long destroyed the original tree, but sprouts having put forth from the stump, and forming part of a circle, calculations were formed therefrom of the size and age of the original tree, which was added to that of those which now exist.

The Sycamore of the Bosphorus, under which it is said Godfrey of the first crusading army encamped, has also disappeared, leaving ten trees, which sprang from the stump; one of which being measured was found to be 1050 years old; and it is possible others of equal age have been removed, and that the present trees are the second remove from the parent stock.

The Chesnut of Mount Etna grew from the stump of a felled tree. These, and other like instances, show how tenacious of life, are the trees of countries, most favorable to their constitutions, and the practice of perpetuating a forest, by cautiously preserving a proper number of sprouts, proceeding from the stumps, is of the most remote antiquity.

Art. II. *Description of Select Hardy Herbaceous Plants, suitable for Ornamenting the Parterre, Border or Shrubbery.* Communicated by Mr Joseph Breck.

(Continued from page 89.)

The genus Pentstemon embraces a family of beautiful plants, worthy the attention of every amateur: many of the species are perfectly hardy, while others require the protection of a frame during winter. The genus is peculiarly American, abounding in the west and southwest of our vast country and Mexico, but none in New England. Many beautiful species have been discovered within a few years, by Drummond, Douglass, and other indefatigable botanists, and to whom we are much indebted for these pleasing acquisitions to our pleasure grounds.

Class Didynamia: (four stamens; two long and two short; but in this genus, there is an imperfect stamen in addition.) Order, Angiosperma (seeds in capsules.) *Natural order*, Scrophularineæ.

The genus is distinguished by its five leaved calyx, a bilabiate, (having two lips,) ventricose, (swelling) corolla; a fifth sterile filament longer than the rest, and bearded on its upper side. The capsule is ovate, two celled, two valved, containing many angular seeds. Its generic name is from *Pente*, (five,) *stemon*, (stamen,) in allusion to its four perfect and one imperfect stamens.

Pentstemon pubescens, produces its purplish blue flowers about June: the pubescent (downy) leaves are lanceolate, oblong, sessile, and serrulate; the flowers in a thin panicle, with the sterile filament bearded above the middle: one foot and a half high.

Pentstemon lævigatum is very similar, but smooth, with paler, later flowers, and is less common: two feet high. These two species are described by Mr Nuttall as being found at the south in barren fields and dry rocky ground: they are not common in our collections, nor do we know that they are to be found in any in this vicinity.

Penstemon staticifolius, is a beautiful, hardy, new species, figured in Edwards' Botanical Register, for June last, which was sent to the London Horticultural Society, by the lamented Douglass, from California. It is said to be nearly related to P. diffusus, from which it differs in its much larger and more lilac flowers, in the form of the leaves, and in those next the root being perfectly entire. It was then extremely rare, only one plant having been originally raised.

Pentstemon diffusus, is said to be very ornamental; but we have not seen it in flower. We raised plants the last season from seed, which will come into flower the present year.

Pentstemon pulchella, is a handsome species, with large bell shaped, pale purple flowers, and long lanceolate, smooth serrate leaves; one foot high. It flowered finely through the last autumnal months, in our collection, although it was from seed the same season.

Pentstemon atropurpureus, is also an ornamental species, with fine dark, ruby purple flowers, which are produced from July to October: one and a half foot high. It is a native of Louisiana: it flowered finely with us the last season, and succeeded best in a rich, black, moist soil.

Pentstemon cœruleum, is one of the finest of the genus, a native of the south, with beautiful blue flowers. Stem smooth: radical leaves linear entire; cauline ones lance linear, entire, all sessile: sterile filament short, bearded above: divisions of the calyx lanceolate, acute, glabrous. We saw this in bloom last season at Cambridge Botanic Garden.

Pentstemon Richardsonii, glandulosa, Bradburii or grandiflorum, Nuttallii, dissectum, erianthera or glaber, hirsuta and campanulata, are ornamental species, but not much known.

When seeds can be obtained, there will be no trouble in raising a supply of plants. It is said to be difficult, or even impossible to raise the seeds in heat. We are inclined to believe there is some truth in the remark, as we succeeded in raising only a few plants in a moderate hot bed, while those sowed in the open ground in May, produced an abundance. As the seeds are very small, they should only be pressed into the soil, or very slightly covered. The young plant should be sheltered from the mid-day sun. Most of the species are easily propagated from cuttings or layers, which readily take root.

In the same natural order with Pentstemon, and in the same artificial class and order, may be found the genus Chelone, with which there is a near relation. It is characterized by its thick, short, ventricose form of the ringent corolla, in which the sterile filament is shorter than than the rest: the anthers are woolly, and the seeds membraneously margined. "Chelone is from Greek, signifying a tortoise, to the back of which, the helmet of the present genus, has been fancifully compared." The species are all handsome flowering plants, suitable for ornamenting the border, flourishing best on a soil of loam with a little peat inclining to moisture.

The only species indigenous with us is Chelone glabra, found in abundance in wet places, flowering from August to October, having large white flowers in dense spikes; the leaves lanceolate, oblong, acuminate and serrate: three feet high. There is said to be a variety, purpurea, with purple flowers, and another with rose or red flowers, var. rosea.

Chelone barbata. The lower lips of the corolla of this beautiful species is bearded; which circumstance, gives to it the specific name. The flowers are a fine scarlet and orange, and produced in profusion from July to August; three feet high; from Mexico: leaves opposite connate (the bases united or growing into one, as the upper leaves of the Honeysuckle) lanceolate, entire. It requires some protection through the winter.

Chelone obliqua. *Red flowered.* We had this ornamental species in bloom last season, but owing to its being placed in a dry soil, did not succeed so well as the last species, which was planted in a moist soil, and which is probably more congenial to its growth.

The flowers are reddish purple, and continue from August to Oc-

tober; three or four feet high when grown in perfection: indigenous to the South: leaves lanceolate, oblique stalked, opposite, finely serrated at the edge.

Chelone Lyonii, is a handsome species, with which we are not acquainted, but desirable: a native, also, of the South: four feet high, with purple flowers in dense terminal spikes, from July to September; stem smooth, much branched: leaves stalked, cordate ovate, serrate.

Chelone latifolia, is another fine Southern species, with red flowers, in much crowded spikes, two feet high: leaves broad, ovate and oval, serrate, abruptly acuminate; tapering at the base, petioled.

Chelone centranthifolium, is a handsome species, figured and described in Paxton's Magazine for April last, resembling C. barbata, but free from the beard at the mouth of the corolla; seven feet high: leaves betwixt ovate and lanceolate, blunt at the point, smooth and somewhat shining. Flowers growing in a panicle, slender and long, forming the upper part of the stem: Calyx, bluish green, five parted: Corolla tubular, slightly inflated, somewhat funnel shaped, bright orange scarlet, limb two lipped, upper lip divided into two parts, lower one into three. A native of California, from whence it was introduced by Mr David Douglass. It is said to make a fine appearance, when growing among bushy plants, and that it will flourish in almost any light soil, if the situation be not too exposed. All the species may be propagated by cuttings and slips from the roots.

The genus Mimulus contains some pretty ornamental plants, suitable for the margin of ponds, or to occupy some place which is rather moist and partly shaded; most of the family requiring considerable water to grow them in perfection

"The generic name is from Greek, signifying an ape or monkey. The flower seeds in front resemble the face of a grinning monkey."

Class, Didynamia, order Angiosperma. *Natural order*, Scrophularineæ. Character of the genus: Calyx prismatic, five toothed; corol ringent; upper lip folded back upon its sides; lower lip with a prominent palate; stigma thick two cleft; capsule two celled, many seeded: seeds minute.

Mimulus ringens, is the only species indigenous in N. England, which is very common about our brooks and wet places in the month of August, with blue, ringent, almost personate flowers, having the palate of the lower lip prominent, and the upper lip reflected at the sides; erect and smooth, with sessile, lanceolate, acuminate leaves, and axillary peduncles longer than the flowers.

Mimulus luteus. *Yellow Monkey flower.* A handsome species from the South, with yellow flowers: one foot high. Stem erect, glabrous, stoloniferous: leaves roundish ovate, nerved toothed; lower ones obtuse, petioled; upper ones acute, closely sessile; raceme terminal: peduncle axillary, opposite, elongated; calyx unequal; teeth acutish. In flower most of the season.

Mimulus guttatus. *Spotted Monkey flower.* The flowers of this species vary much in cultivation. The flowers are yellow, spotted with crimson or brown. One variety has a large round spot upon the central division of the lower limb of the corolla, while other varieties are spotted upon each division.

It produces flowers through the season, with the exception of the hottest part: but is in the greatest perfection in September and October. The height one foot. Foliage very much like luteus.

Mimulus luteus, var. variegatus. *Variegated Monkey flower.* Figured in Edwards' Botanic Register for October. We give the following extract. "The first plants of this species which appeared in this country, were reared from seeds from Paris; but we believe without any intimation of its native country. Since that time Chili has been stated to be the origin of the species, but we know not upon what certain authority; not a specimen have we ever seen of it from that country. We should almost be inclined to suspect it to be some garden production, if it did not remain true from seed; at all events we agree with Dr Hooker in referring it to M. luteus as a variety. It is the prettiest of the genus, and is raised with the greatest facility, provided it is sown in a damp place under the wall, or where it is not fully exposed to the sun's rays. So treated, it grows vigorously and flowers beautifully in May and June. But if exposed to too bright sun and dryness, it loses its vigorous habits, and becomes a poor dwindling thing not worth cultivation."

This and perhaps M. guttatus, are undoubtedly varieties of M. luteus, as they agree in their habits, foliage, and shape of the corolla, which is open; upper lip two parted, folded back: lower lip three parted, central division notched. In the variety variegatus, the tube of the corolla is yellow, finely speckled with crimson: the lips, deep purplish crimson. Having, the last season sowed the seeds of the three species, or varieties, from them were obtained perhaps five hundred plants, which sported into many varieties. Some were entirely crimson except the interior of the tube; others were plain straw, sulphur, yellow or orange, variously speckled, spotted, or margined with

red ; — some were large, while others were inferior flowers ; and presented, during the autumnal months a very gay appearance. Their situation was in a moist place. All the species are easily propagated from cuttings.

Mimulus rivularis, seems to be confounded with M. luteus and other species or varieties, as they have come under our observation ; but as we raised the different varieties from seed, we cannot determine ; there may have been some mistake in the seed, which was received from England.—With the exception of our indigenous species, the Mimulus cannot be considered hardy, although we did preserve some last winter in the open ground with protection, but are easily kept in a cold frame, or in the cellar in pots.

" Digitalis, named by Fuchs, from digitabulum, a thimble, in allusion to the form of the flowers."

Class, Didynamia, order, Angiosperma. *Natural order*, Scrophularineæ. Character of the genus, calyx five parted : Corolla campanulate, five-fid : Capsule ovate two-celled, many seeded. Most of the species are showy border flowers, of easy culture. All the species of this genus, as well as all the genera in the natural order Scrophularineæ, if not poisonous, are suspicious plants.

Digitalis purpurea. *Purple Fox Glove.* This with its variety alba are too well known to require a particular description. They are properly biennials ; but if the old roots are divided every year they are perennials. It is a native of Britain, and is there considered " one of the most ornamental native plants in rocky copses, neglected hedges, and by the road sides. Its large tall spikes attract not only the botanist and florist, but is even conspicuous enough to be introduced in the painter's landscape of such scenery."

We have had account of specimens five or six feet high. The common height is from three to four feet. All who cultivate this plant, should be aware that it is a violent poison. It is cultivated as a medicinal herb, by the Shakers, in their physic garden at Harvard, but we believe there is not so much demand for it as formerly. " When given to the full extent of which the system can admit, the pulse intermits, and vertigo, indistinct vision and nausea, with vomiting or purging occur ; and if after these indications, the quantity be still increased, or if any considerable portion of the recent herb be inconsiderately swallowed, it produces delirium, hiccough, cold sweats, convulsions, syncope and death."

Digitalis ochrolenuca. *Great flowered Fox Glove.* This species

has pale yellow flowers in July and August, four feet high. Leaves ovate lanceolate, acuminate, toothed; stem villus, (covered with fine soft hairs;) bractes twice as long as the flowers; corolla villus, netted. The whole of the genus are peculiarly European; all the species, embracing as many as twentyfive, are found in that section of the globe.

Digitalis lutea. *Small yellow Fox Glove.* A pretty species from France, two feet high. Leaves lanceolate, toothed, smooth. Flowers in a dense, one sided raceme; corolla smooth, pale yellow, segments ovate, bearded; lower bractes longer than the flowers; in June and July.

Digitalis ferruginea. *Iron colored Fox Glove.* From Italy, four feet high. Flowers in a dense pyramidal raceme; sepals edged: corolla bowed, lip ovate, three toothed: in July and August.

All the species are more or less ornamental, and would give variety to the borders if introduced. Some of the most desirable are D. tomentosa, fucescens, ambigua or grandiflora, fulva, aurea, leucophæa, purpurascens and tubiflora.

Antirrhinum. Snap dragon. Class, Didynamia. Order, Angiosperma. *Natural order*, Scrophularineæ. From "*Anti*, like, *rhin*, nose; because the flowers of most of the species bear a perfect resemblance to the snout of some animal."

Antirrhinum majus, and its varieties coccineum, rosea, bicolor lutea and variegata, are popular border flowers, easily cultivated in a dry soil. Best propagated from seeds, which should be sown yearly to produce new plants, as old plants do not flower so well, and are subject to be winter killed.

Antirrhinum linaria, of Bigelow, is included in the genus Linaria: Linaria vulgaris. Were it not that this plant were a troublesome weed, taking possession of the whole of the ground it would find a place in the border, as its flowers are quite ornamental. It might be planted in a tub sunk into the ground. It is found very common by the road sides, near Boston, and probably is not indigenous, but imported from England, its native place. Its yellow and orange flowers are in long crowded spikes; the corolla being furnished with a long, hollow spur beneath. "The mouth is closed with a protuberent palate from the under lip, and gapes open upon lateral pressure, a character which has given the genus the name of Snap-dragon." "The species of Linaria are for the most part pretty annuals: and some of them, as L. cymbalaria, well adapted for growing in pots or for rock

work. C. triphylla is a popular border annual. L. triornithophora, a half hardy perennial, is remarkable for the form of its flowers, which resemble three birds seated in the spur."

The genus Linaria may be distingulshed from Antirrhinum by the spur on the corolla, and by the capsules which in the first is ovate two valved, opening at the end in three-five segments, while in the last it is oblique at the base, without valves, opening at the end by three pores.

Dracocephalum. Dragon's Head. Class, Didynamia. Order Gymnospermia (seeds naked.) *Natural order*, Labiatæ.

The extensive natural order Labiatæ, affords but few ornamental border plants: but it includes many that are useful, and not a single genus that is unwholesome or suspicious. Some are used as aromatics in our food, as Savory, Mint, Marjorum and Basil; others are prized on account of the abundance of volatile oil, which they produce, yielding agreeable prefumes as Lavender and Thyme: While many are used in the preparation of slightly tonic beverages, as Sage, Glechoma hederacea, Balm of Gilead, &c. It includes the whole of the order Gymnospermia in class Didynamia, and eight or ten genera, in Diandria monogynia. The whole tribe have four cornered stems.

" Dracocephalum is from *Drakon*, dragon, and *kephale*, head. The flowers resemble the figure of some grotesque beast. It is therefore called Dragon's head." The genus may be known by the remarkable inflation of the orifice of the corolla: the upper lip concave; the middle division of the lower lip roundish, notched; stamens unconnected; calyx two lipped. Several fine species are found in the United States.

D. virginicum from Virginia, may be considered one of the finest, which, with the following species, are common in many gardens.

It is a tall plant when cultivated, four feet high, with its conspicuous pink flowers in regularly arranged, crowded and elongated spikes from July to September; leaves linear lanceolate, serrate.

D. denticulatum, is a handsome species from Carolina of lower growth; it does not exceed one foot and a half in height; the flowers are pink, in spikes less dense than the last species, in August and September; leaves obovate lanceolate, tooth-letted upwards.

D. austriacum, sibiricum, and grandiflorum with blue flowers, and speciosum with pink flowers, would be desirable acquisitions to the border.

Betonica grandiflora, with light red flowers, and some of the Monardas (*tall balm*) are about all, besides those named, worthy of attention as ornamental hardy plants in Labiatæ.

(To be continued.)

(From the Boston Commercial Gazette.)

Art. III.—*Massachusetts Horticultural Society's Exhibitions.*

Messrs Editors,—I saw in the *New England Farmer* of last week, a report from Samuel Walker, of the Massachusetts Horticultural Society, on an exhibition of flowers from the gardens of Mr Wilder, that I read with great delight, as it was at once a proof that a taste for the cultivation of flowers and for describing of them, had greatly increased within a few years in our country. In former times if Flora was named as a Nymph of lovely mein, it was Ceres alone who received all the honors from the cultivation of the soil. A century ago when Lord Kaimes and others were writing upon ornamental gardening, but little attention had been paid to the subject in America. A few Royal governors and opulent merchants began about that time to cultivate ornamental gardening; but most of these men knew nothing of plants or of flowers, but sustained the expense of a garden as a mark of distinction. The greater part of these cultivators of flowers, in their own gardens, could have given you no more of technical, botanical information, than they could of Heraldry, if you inquired of them an explanation of their armorial bearings, blazoned on the panels of their coaches. The *Fess Point*, would have been to them an enigma, and nothing but the name of a flower was sought for. Not that these were ignorant men: far from it; they were business men, politicians and scholars; but it was not the taste of the times to attend to such things. In fact, with the great mass of the people, perhaps, it would have been a mark of effeminacy to have shown a fondness for flowers. But in this the taste has changed, and the gravest statesman and profoundest philosopher may cultivate, admire, and minutely describe a flower, without losing any particle of his greatness with the people. When the Vassals, the Brattles, the Tracys lavished their wealth in gardening, it was not so. The doings of *Royal governors; the rights of man; the conjectures upon the course the legislature would pursue the next session? who would be Mandamus Councillors? whether the Walpoles would still hold their power?* were the subjects of discussion. The beauties of nature were but little thought of at that time; now and then some one would be singular and take some pains to change, by cultivation, a single pink to a double one, but then his neighbors, winking to each other, said, "he is more nice than wise." Such refined and delicate pursuits as the study of botany

were not proper for men who had frontiers to defend, institutions to build up, and all the elements of society to fashion, in forming a new nation. At least they thought so. The revolutionary war followed this labor; and Ceres, Pomona, and Flora, were all more or less neglected; ploughshares and pruning-hooks were beaten into swords and spears. The soldier, however tasteful, on the track of blood could not stop to admire a wheat-field, nor to examine the beauties of the flowers in his path-way. Soon as the country began to recover from the evils of the revolution, a taste for agriculture and gardening became fashionable, in some measure. Washington set the example: he was a practical farmer, and an excellent gardener. He brought trees, shrubs and flowers from every clime, and spent every hour he could spare from indispensable business, in enriching his collections for the field and the green-house. This example was followed in every State in the Union; in the city of Philadelphia with great success. Every garden in that city, for eight years, was under his eye. Massachusetts was not behind any other State in her attention to horticulture as well as agriculture. The means of indulging in a luxury of this nature were soon acquired after the peace of 1783; and the nucleus of all the vast improvements of this day was then established. The pleasure to be derived in cultivating flowers can now be appreciated by most persons, as their biography and science have become household ornaments; and the utility of the pursuit is a little more remote, but easily traced when our attention is turned to it. The cotton plant, now the great staple article of the world, as to growth and manufacture, was, as oriental tales inform us — and they are always the truth or the shadow of it — once the garden plant of some Asiatic beauty, who, to the delights of vision, as the pods of the plants opened with snow-blown loveliness, with a natural curiosity and taste, added that of touch. The soft and fibrous mass, as her dainty fingers played upon it, seemed to attenuate under the pressure — and at that moment the thought of making it a thread was conceived, and the progress from the distaff to the loom, and from that to ornamental dress, was rapid and astonishing. Taste and fancy have more to do with improvements and science, than we imagine. The culture and the manufacture of cotton have now become the support of more than ten millions of the human race in Europe and America, and of more than fifty millions in Asia and Africa.

Agriculture has received many advantages from accident. Celery, now a common dessert of every table, it is said, came into the garden

plants from the following circumstance: — An Italian nobleman, in a paroxysm of passion, slew his only brother; the church condemned him for three years to a monastery, to prayer and penitence; — his food to be of the weeds which grew within the enclosures about his prison; celery, bleached in the shade of the cloister, then became a favorite food; and when released from his confinement, he transplanted the weed, then but little better than a night-shade, to his garden — it was set in trenches to bleach it, and to make it crisp and tender for his palate. He was a leader in fashionable life, and his example was imitated throughout Europe; and celery became at first a garnishment for the table, then a luxury, and now a necessary for every palate.

The dyes of all the looms of ancient and modern times were borrowed from flowers. The philosophers of the East saw that to please the world they must follow nature. "Mark the lily how it grows — Solomon in all his glory was not arrayed like one of these," says an inspired writer. The poets of a later age, those great interpreters of nature, have followed up the thought, and expanded it with philosophical ingenuity. This thought is scattered through every page of their works, for they have adorned every column of their imperishable temples with these wreaths of nature.

> "Who can paint
> Like nature? Can imagination boast,
> Amid its gay creation, hues like these?
> Or can it mix them with that matchless skill,
> And lose them in each other, as appears
> In every bud that blows!"

Among a prosperous people, there is always a surplus measure of time, which may be used to their advantage if properly improved; and how can it be better filled up than in such sweet and innocent pursuits?

A love of distinction is an innate passion of our souls; the glories of war and of eloquence are fast declining, and yet the love of distinction must be supplied from other sources: Nature is ready, when properly interrogated, by her responses, to fill up the void created by this decline. That which was oncé said in bitter but playful sarcasm, will soon be acknowledged as a settled truth: — "That he who makes two blades of grass grow where only one grew before, is preferable to all the warriors and statesmen put together;" and in modern times we shall find these occupations the more imperishable monuments of

fame. The Lowells, the Kenricks, the Cushings, the Winships,* the Wilders, the Walkers, the Haggerstons, and others, that I have forgotten, have found that their labors have been "like words fitly spoken" — the glory of wisdom — "flowers of gold in pictures of silver."

This cultivation of flowers at the present day, seems not merely confined to gratify a laudable ambition; but to extend itself far, very far beyond it. The florists have gone back to ancient days, as every one must, who intends to follow nature in matters of taste. The greatest efforts of the present generation of florists have been the use of flowers in depriving the grave of its horrors; I allude to the connexion of a garden with a cemetery, as at Mount Auburn. The dark and silent chambers of the dead have always been distressing to the living; they say, with Othello —

> "Here is my journey's end, here is my birth,
> And every sea-mark of my utmost sail."

The horticulturist of Mount Auburn leaves his flowers with a different feeling than that experienced by our great ancestor when driven from Eden,

> "O flowers,
> That never will in other climates grow,
> My early visitation, and my last
> At ev'n, which I bred up with tender hand
> From the first opening bud, and gave ye names,
> Who shall now rear ye to the sun, or rank
> Your tribes, and water from th' ambrosial fount?"

The florist now knows that from the garden he loved, that those very flowers which he reared to the sun, are to be planted around his grave; to shed their perfume and scatter their leaves on every summer breeze. This "lovely conceit," like Ophelia's pure imagination, "has turned everything to prettiness";—and the traveller, as he wanders

* On Saturday, March 5, our correspondent was presented with a splendid BOUQUET, containing *eighty different kinds of flowers*, and he thus acknowledges the receipt of his rare and beautiful present.—

☞ A CARD.—PHILO-FLORIST takes this medium of the public press to acknowledge the receipt of a garland of flowers, of extensive variety and of surpassing beauty, from the Messrs WINSHIP, of Brighton. For this kind offering he tenders to them his thanks, and with them would express his earnest wishes for their prosperity. If Flora had always been so attentive to the Muse of History, we should have known more of the gardens of the Ancients than we now do; but in coming time they will be better acquainted with each other, for the former has given the latter a new subject to celebrate—her struggles with Nature in acclimating "herb and flower" to much higher latitudes than their native beds, and still not retaining, but increasing their beauties:—this truth is verified by glancing at the sacred sun-flower of the Incas, which, under the hand of taste and science, developes new varieties and splendor, in a strange soil, at each successive season.

through this labyrinth of flowers, which seem to cover the hearse and the pall, and to hide the spade and the mattocks, whispers to himself "can this be death?"—if it be

> "Death is the privilege of human nature;
> And life without it were not worth the taking!"

Go on, ye florists; and while you contend, in innocent rivalry, in making earth's bosom each year more lovely than the last, be assured that you will secure the affection and gratitude of all; and that even he who has no parterre of flowers to boast of, no garden from which to gather golden fruits, will select those which the Muses have scattered over the fields of knowledge and taste, and bind them on your brow.

PHILO FLORIST.

(From Paxton's Magazine of Botany, and Register of Flowering Plants for October.)

ART. IV.—*Remarks on the Culture of Perennials in general.*

PERENNIALS, are those plants, which do not, in their growth, form either trees or shrubs, but which lose their tops wholly, or in part, every year after they have done flowering; the roots continuing to live and regerminate for several years successively.

Perennials are of two kinds, *bulbous* and *herbaceous*, which, differing materially from each other in habits, require, consequently, a different kind of treatment. Such being the case, it will be necessary to make a few remarks on each kind separately; and

BULBOUS PERENNIALS.

These are of three kinds, viz:—Hardy, or such as will grow in the open border; Greenhouse, or such as require a little protection from cold and wet, but very little heat; and Stove, or those that will not grow to perfection without artificial heat.

Hardy Bulbs, with a few exceptions, are remarkably easy of cultivation, and if planted in proper soil and situation, seldom fail to produce plenty of offsets and seeds for propagation.

The best kind of soil for their growth is a light loam, rather sandy than otherwise, yet not too light, or the bulbs will be injured during the heat of summer, and if adhesive, they invariably grow weakly and seldom flower.

As to the depth which the different bulbs require to be planted in

the ground, no certain rule can be laid down; some species require to be planted not more than an inch and a half deep, and others from four to six inches. This must, therefore, be left to the judgment of the planter.

Encourage as much as possible the growth of the leaves, by giving them free exposure to light and air, for on them depends the success of the bulb's flowering the following year. If the leaves grow strong, a good quantity of strong pulp is stored up in the bulbs, and a good bloom is the consequence.

Never, if it can be avoided, disturb the roots by removal during the time of their growth; but if obliged to do so, select a wet day, and take them up with good balls, so as not to injure the fibrous roots.

The only time to remove them with success, is during the season of their torpidity, at which time the offsets may be separated, and planted where the cultivator may judge best.

The season of rest for most of the spring-flowering bulbs happens shortly after they have done flowering; but the autumn-flowering ones rarely become torpid till towards the following summer; but the only general rule that can be laid down in this is, that when the tops have quite died down, then is the time to separate or remove them without injury.

With a few exceptions, as in the case of tulips, and several other florists' flowers, hardy bulbs always do better when not kept long out of the ground, after being taken up. Indeed it is always advantageous to plant them again at the same time they are taken up and separated, because *first*, if kept in too dry a place, they are liable to become exhausted, and in some cases to shrivel. *Secondly*, if kept in a damp place, they invariably mould, and often perish. *Thirdly*, when left in the ground, they make their roots sooner and much stronger than under other circumstances. *Fourthly*, the season at which they ought to be planted, may prove so busy a time with the gardener, that he may scarcely be able to attend to them, until after they have begun to grow, which in general weakens their flowering, if it does not totally prevent it. And, *fifthly*, if planted at the time of separation, all anxiety about them is at an end.

Many of the more tender kinds of bulbs in the borders will require protection from heavy rains, whilst in a torpid state, particularly if the situation be low flat or damp; but if planted on banksides, under the walls of hot houses or other dry situations, this precaution will scarcely be necessary. The readiest and least troublesome way is to

place an inverted flower-pot over them, and lay a bit of slate over the draining hole. The more hardy kinds rarely suffer, and there need no particular care.

Green House Bulbs.

These differ from the last by being usually grown in pots, from the facility with which they can be removed from one place to another, either at the time of flowering or when in a torpid state, and from the different temperature they require. There are five things indispensable for the successful growth of exotic bulbs, viz. :—suitable soil, a proper temperature, due precaution in watering, perfecting the growth of the leaves, and allowing them a proper season of rest, called wintering.

The soil should be richer than that in which the hardy kinds grow, because from their confinement in pots they are unable to obtain any other nourishment, except what they receive directly from the aid of the cultivator. A light rich loam mixed with very rotten dung, and a portion of peat, perhaps is the best, as a general mixture for them ; but there must be many exceptions to this rule ; for some species require nearly all peat, and others flourish best in nearly all loam ; and in these exceptions the cultivator must be guided by the native habitats and strength of growth of each species.

Temperature. Those termed green house bulbs, require, during their times of flowering, little more than shelter from cold winds and heavy rain ; but at the time they first begin to grow, and after they have done flowering, it is always advisable to give them a gentle warmth, — first to assist them to flower fine, and, lastly, to encourage the leaves to grow fine.

Watering. All the kinds require a good supply of water when in a state of active and vigorous growth ; but whilst in a state of torpidity they should be removed to a place where they can remain perfectly dry, until the season of their growth commences again.

Perfecting the leaves. Unless the leaves are perfected properly, no certain success can be anticipated. To encourage their growth, do not place them behind or under the plant stage as is a common custom ; but expose them to a little extra heat, give them plenty of light, and gentle waterings occasionally with liquid manure ; but as soon as the leaves begin to die, lessen the quantity of water, remove the plants to a cooler situation, and eventually leave them dry altogether.

Wintering. During their time of their torpidity, any dry, cold pit or frame will suit them, provided they are not exposed to the effects

of frost or water; and as soon as the season is arrived in which they begin to grow, the bulbs should be shook out of the soil, the offsets be separated and repotted in fresh soil, and placed in gentle heat.

In potting, always be careful to drain well, for a stagnation of water usually destroys the bulbs. After potting, as soon as the plants begin to grow, give a gentle supply of water, increasing it as the plants get more strength.

Stove Bulbs require the same kind of treatment as green house bulbs in every respect, except temperature. Being natives of tropical countries, they require the heat of a good stove, and at the time of their torpidity, placing in a temperature not lower than that of the green house.

Herbaceous Perennials.

The mode of cultivating this class of plants is perfectly easy: three things chiefly have to be attended to. *First*, the manner of propagating; *second*, the most suitable soil; and *third*, the requisite temperature. There are five methods of *propagation* practised; by divisions, suckers, seeds, layers and cuttings.

Dividing the roots. This may be done either with a kind of knife, if the plant is small, or a spade, if the root is large and strong. The best time for doing it, is when the tops are just beginning to grow, after having been cut down.

Suckers. These may be taken up any time when they appear; but the most usual time is when the plant is beginning to grow.

Seed. Sow, for the most part, early in spring, in light soil, and plant out the following autumn in the situations where they are to flower.

Layers and Cuttings. Proceed precisely in the same manner as for propagating soft-wooded shrubs and trees.

Soil. Different species of plants require rather different kinds of soil: but a light rich loam will suit the greater part of plants. Those confined in pots should have the soil enriched with a little very rotten dung.

Temperature. Plants may be divided into three or four kinds; hardy, frame, greenhouse and stove. The first requires very little care, except keeping free from weeds after once they are planted; but the three last are more trouble, because they grow in pots. They all require similar treatment to each other; with the exception of the heat. The first will bear all weathers without injury; the second require a slight shelter in winter: the third require a little protection during most part of the year; ***and the fourth will not flourish without a brisk heat.***

Art. V.—*Extracts from Foreign Publications.*

The following flowers are figured and described in the October, November and December numbers of *Edwards' Botanical Register*, edited by John Lindley, which have not been noticed in the back numbers of the Horticultural Register. Some of the most singular of those described, are found in the Natural order Orchideæ, which have of late attracted the attention of amateurs, as well as botanists. The number of the species in this tribe, already discovered, amounts to nearly fifteen hundred, and the number is monthly increasing, and will increase, perhaps, for ages to come, until every nook and corner of the earth has been explored. Lindley, in his *Introduction to the Natural System of Botany*, says — "Orchideæ are remarkable for the bizarre figure of their multiform flower, which sometimes represents an insect, sometimes a helmet with the vizor up, and sometimes a grinning monkey; so various are those forms, so numerous their colors, and so complicated their combinations, that there is scarcely a common reptile or insect to which some of them have not been likened."

"They are found in almost all parts of the world, except upon the verge of the frozen zone, and in climates remarkable for dryness. In Europe, Asia, and North America, they are found growing everywhere, in groves, in marshes, and in meadows; in the drier parts of Africa, they are either rare or unknown; at the Cape of Good Hope, they abound in similar situations as in Europe; but in the hot damps of the West and East Indies, in Madagascar, and in the neighboring islands, in the damp and humid forests of Brazil, and on the lower mountains of Nipal, these Orchideous plants flourish in the greatest variety and profusion, no longer seeking their nourishment from the soil, but clinging to the trunks and limbs of trees, to stones and bare rocks, where they vegetate among ferns, and other shade loving plants in countless thousands. Of the epyphytic class, only one is found so far north as South Carolina, growing upon the branches of the Magnolia, if we except the species from Japan, which, as I have elsewhere stated, appears to have a climate peculiar to itself, among countries in the same parallel of latitude." We will first notice those plants in the *Natural order* Orchideæ. *Gynandria Monandria* of Linnæus. "Coryanthes maculata. *Spotted Coryanthes.* A native of the woods in Demarara, where it is not uncommon, hanging from

the branches of trees, and suspending in the air the singular lips of its flowers, like fairy buckets, as if for the use of the birds and insects that inhabit the surrounding foliage. There certainly is not a more singular genus than this in the whole vegetable kingdoms, nor one whose flowers are less like flowers, to the eye of the ordinary observer. The sepals are of the most delicate texture; when young they spread equally round the centre, but after a few hours they collapse, and assume the appearance of a bat's wing half closed. The lip is furnished near its base with a yellow cup, over which hang two horns constantly distilling water into it, and in such abundance as to fill it several times; this cup communicates by a narrow channel formed of the inflated margin of the lip, with the upper end of the latter, and in this, also, is a capacious vessel very much like an old helmet, into which the honey that the cup cannot contain, may run over."

"Govenia superba. *Superb Govenia.* So called in compliment to James Robert Gowen, Esq. under whose care were conducted many of the curious experiments upon cross fertilization at Highclere, the seat of the Earl of Carnarvon. This noble species was originally discovered by Messrs Lexarza and La Llave on the mountains near Valladolid, a town of Mexico, flowering in August. The native name is *Azuzena amarilla.* It is one of the handsomest of the whole order of Orchideæ, and is especially remarkable for its stately appearance, the rich orange of its flowers, and the long time they continue to open. The specimen in the Messrs Loddiges' collection grows to the height of a man. It is found to bear the hottest and dampest stove, but, like all terrestrial species, requires a season of repose.

"Pleurothalis Grobyi. *The Groby Pleurothalis.* A native of Demarara, whence it was imported by Mr Bateman, who named it in compliment to Lord Grey of Groby. It belongs to a very pretty species, all of which are characterised by having their leaves so much longer than the secondary stems as to conceal them and form dense tufts." A dwarf plant three or four inches high, with small yellow, red striped flowers.

"Maxillaria crocea. *Saffron-colored Maxillaria.* Introduced from Rio Janeiro in the spring of 1833. *Flowers* before expansion having some resemblance to the beak of a bird; pale green, with a brownish tinge at the spur. *Perianth* of a greenish yellow, becoming of an orange yellow when expanded. *Sepals* narrow and pointed,

the three exterior ones being each about the same size and length, with their edges turned back. The two interior ones are rather shorter than the others, somewhat curbed, and crossing so as to conceal the column. *Labellum* about half the length of the sepals, thick, and fleshy, connected to the lengthened base column, which forms the spur; cucullate and crisp at the margin, which is rather paler than the sepals, otherwise it is of a brownish red color, together with the column."

"Stanhopea oculata. *Eyed Stanhopea.* Imported by Messrs Loddiges. It is the most interesting of this splendid genus, on account of the extremely delicate waxy appearance of its surface, the softness of its ground color, and the richness of the deep purple spots, which, lying upon a bright yellow field, so very conspicuously ornament the base of the lip and petals. It is said to be a native of Brazil."

"Maxillaria picta. *Painted Maxillaria.* A truly beautiful plant, found wild in the Organ mountains of Brazil, and originally introduced by the late lamented Mrs Arnold. When well managed, it throws up a profusion of its gay speckled flowers, which remain perfect for some time."

"Maxillaria densa. *Dense-flowered Maxillaria.* A native of Mexico, whence it was imported by the Messrs Loddiges, in whose stove it flowered in January last. Flowers in a dense head, white and pink. The stems rise some height above the ground, and are closely invested with brown withered scales, from the axils of which spring the pseudo-bulbs and flowers."

"Fernandezia acuta. *Sharp-leaved Fernandezia.* A native of Trinidad, whence it was imported by Mr Knight, in whose collection it flowered in June last." A neat little plant, with orange and crimson flowers, with numerous short, acute, sheathing leaves which are closely imbricated upon the stem."

"Vanda téres. *Taper-leaved Vanda.* This superb epiphyte was originally discovered upon trees in Sylhet by Dr Wallich, and it has more recently been met with by Mr William Griffith abundantly near Medown in the Burmese Empire, also growing on trees in the woods. When Dr Wallich came to England, this species formed one of the numerous living plants brought home under his care, and blossomed during the voyage. The very flowers which were then produced, we are so fortunate as to possess in spirits, through the kindness of their liberal discoverer. They measure nearly four inches and a half from

the tip of one petal to that of the other, but only two were formed upon the spike. The specimens from Mr Griffith are not quite so large in the flower, but there are three blossoms to each spike."

"Nothing can exceed the flowers of this plant in delicacy of texture or softness of color; the deep purple of the petals softens away to the margin, and seems to melt as it were into the purer white of the sepals, while the rich yellow and crimson of the lip renders the brilliancy of the other parts still more conspicuous."

"Maxillaria cristata. *Crested Maxillaria.*" A remarkably beautiful epiphyte, which flowered in the collection of Mr Knight last July. "It is a native of Trinidad, growing on old decayed branches of trees near the Mud Lake. The lip is a most curious organ. It is of a firm fleshy texture, and is deeply divided into three parts; of these, the two lateral ones are falcate and smooth, while the middle one is rounded, has a strong tooth on each side, and is bordered by a deep white fringe of necklace-shaped hairs; then the short stalk of the lip, has four or more such hairs, growing straight from its border, and the disk is furnished with a large white two lobed flat tooth, the divisions of which diverge from each other. The striping, banding, and painting of the delicate white flowers with rich crimson, produces a very rich and striking effect."

"Macradenia triandra. *Triandrous Long-gland.* A native of Surinam, whence it was brought by Mr Lance," having a decumbent spike containing six yellow and crimson flowers.

"Eulophia lurida. *Lurid Eulophia.* One of the easiest of all stove Orchideous plants to cultivate, growing upon a damp wall, or rough stone, or under almost any kind of condition, provided the air be hot, and damp, and uniform. It then flowers profusely at intervals throughout the year. A native of Sierra Leone, whence great quantities are occasionally brought. It appears to be very common upon the trunks of trees in some parts of the colony."

Lindley remarks that "It often happens that those productions of nature which charm the eye by their beauty, and delight the senses with their perfume, have the least relation to the wants of mankind, while the most powerful virtues or most deadly poisons are hidden beneath a mean and insignificant exterior; thus Orchideæ, beyond their beauty, can scarcely be said to be of known utility, with a few exceptions. The nutritive substance called Salep is prepared from the subterraneous succulent roots of Orchis mascula and others."

"Fuchsi discolor. *Port Famine Fuchsia.* Octandria Monogynia.

Natural Order, Onagraceæ. A native of Port Famine in the Falkland Islands, resembling F. gracilis and tenella, but decidedly a different plant; remarkable for its compact, bushy manner of growth, its deep purple branches, its small very undulated leaves, and also for its being apparently more hardy than any other Fuchsia yet in the gardens. For the latter reason we attach especial importance to it, for by a judicious intermixture of its pollen with such beautiful plants as F. conica, globosa, and its more tender relatives, the whole race may probably be rendered capable of bearing the climate of Great Britain, and may thus become far more generally valuable than they yet are."

Elichrysum bicolor. *Two-colored Elichrysum.* Syngenesia Superflua. *Natural Order*, Astraceæ, (Compositæ). A beautiful new hardy annual, a native of Van Dieman's Land. In appearance it resembles the new common E. bracteatum, (*Golden Immortal Flower*), but is much handsomer.

Oxalis Piottæ. *Piotta's Oxalis.* Decandria Pentagynia. *Natural Order*, Oxalidaceæ. A truly beautiful little half hardy, or frame perennial, flowering most copiously during the months of July and August. A little tuft does not, indeed, produce much appearance, but a pot filled with its dense green leaves, and covered with the large salmon colored flowers, is a lovely object. Said to be a native of the Cape of Good Hope."

"Galatella punctata. *Dotted Galatella.* Syngenesia Polygamia Frustranea. *Natural Order*, Asteraceæ, (Compositæ). A hardy herbaceous plant, native of salt marshes in Hungary, Podolia, and elsewhere in the east of Europe. In this country, it flowers in July and August, growing to the height of about two feet, and forming a thick compact bush." A plant of no great interest, with blue flowers.

"Rhododendron pulcherrimum. *The lovely Rhododendron.* Decandria Monogynia. *Natural Order*, Ericeæ. A most beautiful plant, obtained by Mr Waterer of Knap-hill; between R. arboreum and caucasicum. It is of rather delicate appearance, but we are informed it is quite hardy, and an abundant flowerer." Flower light pink, shaded with dark. The flower of another variety, called R. Nobleanum, is also figured, very much like the other in all respects, except that its flowers are of a deep and brilliant rose color. Both are among the handsomest hardy shrubs cultivated in England, but too tender for our climate.

Ochranthe arguta. *Fine-toothed Palebloom.* Pentandria Tryginia. *Natural Order,* Hypericaceæ Anomalæ. A pretty green-house plant, native of China, with handsome foliage, resembling that of the Camellia. Flowers yellowish white, small, in terminal racemes.

Prunus Japonica. *The Single Chinese Plum.* Icosandria Monogynia. *Natural Order,* Rosaceæ. This pretty, hardy shrub, will be an object of interest to the botanist if not to the florist, being the origin of the "Double Chinese Plum, or Almond, as it is often incorrectly called." "It is always interesting to procure the wild forms of cultivated species, and so see from what humble originals Nature produces some of the most striking works." The double flowering Almond is one of the most ornamental shrubs that adorns our gardens.

"Edwardsia chilensis. *Chilian Magu Tree.* Decandria Monogynia. *Natural Order,* Leguminosœ. A fine tree, native of Chili, where the inhabitants call it Magu. Introduced by Messrs Lodiges, in 1822. It proves to be a hardy, handsome tree, flowering in May in great profusion. Flowers yellow, papilionaceous, in spikes.

"Ipomœa Aitoni. *Mr Aiton's Ipomœa.* Pentandria Monogynia. *Natural Order,* Convolvulaceæ. A pretty perennial stove climber. It flowers from April till October. Flowers lilac, with purple centre, and striped with the same color."

"Eutoca viscida. *Clammy Eutoca.* Pentandria Monogynia. *Natural Order,* Hydrophyllaceæ. A new, hardy annual, found in California by Mr Douglas, and raised by the Horticultural Society, in whose garden it flowered this summer for the first time. It is perfectly hardy and will grow in any common soil. The blue of the flowers is remarkably deep and brilliant, so that the plant has a handsome appearance; but its leaves are rather course and weedy. We know, however, of no plant better adapted for bouquets; for it will go on growing and flowering in water for two or three weeks after being gathered."

"Cereus triangularis. *Triangular Torch-thistle.* Icosandria Monogynia. *Natural Order,* Cactaceæ. A native of Mexico and the West Indies. The plant had been in the collection at Leigh Park upwards of fifteen years without blossoming, until September, 1834, when two flowers were perfected. One was despatched to London, and is thus described:

"It was, indeed, a beautiful object; its petals were of the most dazzling whiteness, the effect of which was greatly heightened by the

dense mass of yellow stamens occupying the centre, and by the border of olive green sepals, on which the petals reposed. This is said to have the largest flowers of all the species, not even excepting the common night-blowing Cereus: its fruit is described as being quite smooth, of a rich scarlet, and with the size and form a goose's egg."

"Cratægus Douglasii. *The Douglas Thorn.* Icosandria Mono-Pentagynia. *Natural Order*, Rosaceæ. A native of North West America, where it was collected by Mr Douglas. A hardy tree of small size, flowering in May."

A few other plants are figured in this work of no great interest except to the botanist. The numerous works devoted to botany, Floriculture and Horticulture, published and patronised in England, indicate a very different state of feeling in relation to these subjects there, than what exists in this country.

A monthly publication here at the expense of from six to ten dollars per year, would find but few supporters; but there it is not so, as the many beautiful works prove. We shall be able from time to time, to give extracts from some of the leading works devoted to these subjects; and sincerely hope the time will soon come when we shall not be quite so far behind our transatlantic friends. J. B.

Art. VI.—*Miscellaneous Matters.*

Mildew on Grapes.—A gentleman of this village, who takes much interest in these things, informs us that he has discovered a *sure* remedy for mildew upon grapes. The mildew has been the great bane to the success of growing the more tender but delicious kinds of grapes in this quarter, and even the much prized Isabella suffers more or less by it. The gentleman above-mentioned, says, that he last year discovered that his grapes began to mildew badly, that he had formerly tried sulphur and other remedies without success, and that he made the experiment of applying strong *soap suds* with a syringe to a few bunches, and these came to maturity, plump, smooth and fair, while all the rest upon the same vine were so badly mildewed as to be unfit for use. Should this simple remedy prove effectual, our courage will again be revived in cultivating this delicious table fruit.—*Fredonian Censor.*

Strawberries.—Among the numerous kinds of fruits which are indispensable to good living is the strawberry. Besides being a most delicious dessert fruit, it is considered by medical men a valuable medicine in several diseases — particularly putrid fevers and pulmonary consumptions. A free use of strawberries, it is said, will both prevent and cure the rheumatism. There are several varieties of excellent flavor, and by a judicious selection, and a little labor, a full supply may be had through the season. The ordinary method of cultivation is to prepare the ground, by manuring and spading, and transplant in August. The distances between the rows is generally from eighteen inches to two feet, and between the plants from nine to fifteen inches, according to the varieties. The runners the first year are cut off before they take root. Some cultivators cut off the leaves in autumn. The second year the runners are permitted to take their course — filling up the space between the plants and producing, ordinarily, a good crop of large sized strawberries. Some lay down straw or grass for the runners to run upon. The utility of this is manifest in many respects, but especially in keeping the fruit from coming in contact with the earth, by which it would be injured by dirt. After the fruit is gathered the straw should be removed and the plants cleared of weeds. They should be transplanted every second year.

Anthracite Coal Ashes.—The Philadelphia Horticultural Society has awarded Mr J. A. Snyder the premium for the best assortment of fruits. The account states that the fruit consisted of Peaches, Nectarines, and Green Gage Plums, produced within the city and in an unfavorable situation. Mr Snyder had been in the habit of placing ashes of Anthracite Coal about the roots of his fruit trees, and to that circumstance he attributed their preservation from the attacks of insects. Col. Carr stated that he had practised the same for two years past, and that it seemed to afford effectual protection from those insects which attack the roots.—*Silk Cul.*

Rhubarb, or Pie Plant.—The seed of this plant having ripened, it may be sown immediately with advantage, on a bed of good earth. Sow in drills, cover the seeds half of an inch, press the earth smartly to them, thin the plants, and next spring they may be planted out, at a yard apart, and the stalks may be used the first season.—*Cultivator.*